

**PATENT**

**IN THE CLAIMS**

Please amend the claims as follows. Please cancel claims 34-46 and add new claims 47-

66. A complete listing of the claims is shown below.

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
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12. (Canceled)
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16. (Canceled)
17. (Canceled)
18. (Canceled)
19. (Canceled)
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21. (Canceled)
22. (Canceled)
23. (Canceled)
24. (Canceled)
25. (Canceled)
26. (Canceled)

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- 27. (Canceled)
- 28. (Canceled)
- 29. (Canceled)
- 30. (Canceled)
- 31. Canceled)
- 32. (Canceled)
- 33. (Canceled)
- 34. (Canceled)
- 35. (Canceled)
- 36. (Canceled)
- 37. (Canceled)
- 38. (Canceled)
- 39. (Canceled)
- 40. (Canceled)
- 41. (Canceled)
- 42. (Canceled)
- 43. (Canceled)
- 44. (Canceled)
- 45. (Canceled)
- 46. (Canceled)

47. (New) A wireless communication device comprising:  
a plurality of antennas configured to receive a plurality of symbol streams;  
a first processor configured to process the plurality of received symbol streams and to provide a plurality of detected symbol streams, one detected data stream for each stage of the successive interference cancellation processing; and  
a second processor configured to process each detected symbol stream to provide a corresponding decoded data stream and to determine a received signal-to-noise-and-interference ratio (SNR) and an effective SNR for each of the plurality of data streams based on the received SNR.

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48. (New) The apparatus of claim 47, wherein at least two data rates of at least two of the plurality of received symbol streams are unequal.

49. (New) The apparatus of claim 47, wherein the second processor is further configured to compare a required SNR for each symbol stream against the effective SNR for the symbol stream and to determine whether or not a rate for each symbol stream is supported based on the comparison.

50. (New) The apparatus of claim 49, wherein the required SNR is a minimum SNR for a communication system utilizing the apparatus.

51. (New) The apparatus of claim 47, wherein the first processor and the second processor comprise a single integrated processor.

52. (New) A method for determining data rates for a plurality of data streams to be transmitted via a plurality of transmission channels, comprising:  
determining a required channel state information parameter for each of a plurality of data rates that may be used for the plurality of data streams, wherein at least two of the data rates are unequal;  
comparing the required channel state information parameter for each data stream against information indicative of the channel state information parameter for the data stream; and  
determining whether or not some of the plurality of data rates are supported based on comparing.

53. (New) The method of claim 52, wherein the effective channel state information parameter comprises an effective signal-to-noise-and-interference ratio (SNR) and the required channel state information parameter comprises the required SNR.

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54. (New) The method of claim 53, wherein the effective SNR for each data stream is further determined based on a received SNR indicative of an operating condition of the plurality of transmission channels.

55. (New) The method of claim 53, wherein the received SNR is determined based on the required SNR for one of the plurality of data streams.

56. (New) The method of claim 53, wherein the plurality of data rates are deemed to be supported if the required SNR for each data rate is less than or equal to the effective SNR for the data rate.

57. (New) The method of claim 52, further comprising:  
evaluating a plurality of sets of data rates; and  
selecting a rate set for the plurality of data streams based upon a minimum value for the required channel state information parameter.

58. (New) The method of claim 52, wherein the data rates in each rate set are selected to achieve a specified overall spectral efficiency.

59. (New) The method of claim 52, wherein the some of the plurality of data rates comprises all of the data rates.

60. (New) The method of claim 52, wherein the plurality of data streams are transmitted over a plurality of transmit antennas in a multiple-input multiple-output (MIMO) communication system.

61. (New) An apparatus in a multi-channel communication system, comprising:  
means for determining a required channel state information parameter for each of a plurality of data rates that may be used for the plurality of data streams;

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means for comparing the required channel state information parameter for each data stream against information indicative of the channel state information parameter for the data stream; and

means for determining whether or not some of the plurality of data rates are supported based on comparing.

62. (New) The apparatus of claim 61, wherein the effective channel state information parameter comprises an effective signal-to-noise-and-interference ratio (SNR) and the required channel state information parameter comprises the required SNR.

63. (New) The apparatus of claim 61, further comprising:  
means for evaluating a plurality of sets of data rates; and  
means for selecting a rate set for the plurality of data streams based upon a minimum value for the required channel state information parameter.

64. (New) The apparatus of claim 61, wherein the means for selecting the rate set comprises means for selecting the rate set to achieve a specified overall spectral efficiency.

65. (New) The apparatus of claim 61, wherein the some of the plurality of data rates comprises all of the data rates.

66. (New) The apparatus of claim 61, wherein the plurality of data streams are transmitted over a plurality of transmit antennas in a multiple-input multiple-output (MIMO) communication system.